MYRMECIA

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THE COVER

Robbie van Hemert from Newcastle won second prize at Freemantle in the Society Insect Illustration competition with this drawing of a spider.

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NOTICE

Statements made in *Myrmecia* do not necessarily represent the views of the Australian Entomological Society. Items printed herein should not be reproduced without permission of the author of the material.

COPY DEADLINE FOR NEXT ISSUE

Material for publication in our August 2003 issue should be in the hands of the Editor before **Friday 18 July 2003**.

Copy is requested as .rtf e-mail attachments at: laurence.mound@csiro.au

EDITORIAL

With the passing of Faith Evans in Sydney on 22 March, at the age of 90, another era of Australian entomology closes. Faith was the daughter of R.J. Tillyard and wife of John Evans. I well remember she and John visiting me in London during 1966 and encouraging me to take an interest in Australia's thrips. Those of you who remember them in their prime will understand that my word "encouraging" is something of a euphemism. Between Doug Waterhouse's carrot and John Evans' stick, the outcome was inevitable. Thus entomology's torch is passed on.

This year, our Society meeting is in the Apple Island and, since it is combined with the Invertebrate Biodiversity and Conservation Conference, we hope more members will attend and contribute to this more exciting and diverse programme. Many details of the meetings are given in this issue of *Myrmecia,* and more are available at the excellent web site: <www.cdesign.com.au/entomology>. Indeed, given that so many biologists who work on insects these days are not members of AES, perhaps we should ensure that all of our future meetings are held jointly with some other group.

I note that the minutes of AES Executive Meeting 408 (page 6 below) state that "the Executive believes that the membership drive is a prime responsibility of the Regional Councillors". Individual Councillors might like to consider organising local meetings of Society members, whether for scientific or social purposes, to generate corporate involvement in a 'new members' drive leading up to ICE. As Meron Zalucki points out in this issue, many members are giving the Society great service in the lead-up to ICE in Brisbane next year. Your news bulletin editor holds similar views to our executive, concerning information of interest to our membership that can be published in *Myrmecia*. Perhaps we need to ensure that anyone who accepts the responsibility of becoming a Councillor (whether we coerce them into that position or not!) will have sufficient time to serve the interests of our Society in promoting Australian entomology, and promoting corporate action by entomologists. That's a tall order, but we need the support of all students of insects if we are to maintain the influence of our profession.

LAM

Invertebrates & Environmental Change

34th Australian Entomological Society/ 6th Invertebrate Biodiversity & Conservation Combined Conference

28 September – 3 October 2003
The Corus Hotel, Hobart, Tasmania
This is the first time that these two conferences have been combined, and the synergy offers a unique opportunity to discuss key issues in both environmental and applied areas of invertebrate ecology and biology. Aside from the science we trust that you will also take the time to explore Tasmania and enjoy the magnificent natural beauty of this state.
Register online at <www.cdesign.com.au/entomology> or download the registration form and send to *Conference Design* [see also *Myrmecia* pp 27-28]

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Niall Doran	(DPI Water & Environment)
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Simon Grove	(Forestry Tasmania)
Peter McQuillan	(University of Tasmania)
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Owen Seeman	(DPI Water & Environment)
Liz Turner	(Tasmanian Mus. & Art Gallery)

Scientific Advisors

Graham Edgar	(University of Tasmania)
Karen Gowlett-Holmes	(CSIRO Marine Res.)
Bob Mesibov	(Queen Victoria Mus.)
Brian Smith	(Queen Victoria Mus.)

Hobart - The Host City

Tasmania is the smallest and southernmost State of Australia. Our Island State offers visitors a unique experience, presenting an unending variety of spectacular scenery, the world's tallest hardwood forests, rugged wilderness, diverse coastlines, vineyards, historic villages, arts and crafts, and quality restaurants. Hobart, with a rich maritime history, lies at the foot of beautiful Mount Wellington. Our citizens enjoy a comfortable lifestyle in a temperate climate, with easy access to Tasmanian Wilderness World Heritage Areas. The city is a lively destination with easy access to shops, Tasmanian souvenirs, crafts and a cosmopolitan cafe society.

The Conference Venue – Corus Hotel Hobart

Our venue is a recently refurbished four and a half star hotel, and benefits from high levels of guest comfort and services surrounded by contemporary design and Tasmanian art. It offers a winning combination of great facilities, bars, restaurants and convenient location, and is situated in the Central Business District, only minutes to the major shopping and entertainment centres.
A 15 minute walk will take you to North Hobart where you can experience a range of ethnic restaurants. Another pleasant short work takes you to Hobart's famous wharves and historic Salamanca Place, the heart of early Hobart, with its cosmopolitan atmosphere and wonderful Saturday market.

Conference Objectives and Symposia

The conference has been given the over-arching theme "*Invertebrates & Environmental Change*". The theme encompasses the management of invertebrates from natural to agro-ecosystems and processes of environmental change from a global to a local (ie within crop or habitat niche) level. It is anticipated that keynote speakers and many, though not necessarily all, of the symposia will address this theme. Proposed symposia topics include:

Conservation management
Ecology and population dynamics
Marine/freshwater invertebrate biodiversity
Special environments
Systematics and phylogeny
Invasive species/quarantine
Habitat fragmentation
Integrated pest management
Insect-plant interactions
Genetics, evolutionary biology and ethology
Researcher/management decisions and environmental change
Fire management

Delegates wishing to propose a symposium topic for consideration should do so by contacting Penny Archer at Conference Design (penny@cdesign.com.au). They should provide the organising committee with the aims and themes of the symposium, possible speakers and whether they are interested in having the symposium published. The committee will consider themes as they arrive for acceptance and notify symposium proposers accordingly. Final decisions on symposia will be based on the number of submitted abstracts in each category.
We anticipate concurrent sessions and have arranged for all posters to remain displayed throughout the

conference in the morning/afternoon tearoom venue. We also hope to provide the opportunity for further social/mixer activities though this will be dependent on final delegate numbers and budget.

Plenary Speakers

There will be four plenary speakers, one preceding the submitted talks on each of the four days (excluding the Wednesday field trip). The three confirmed speakers are:

Dr Joanne Daly (CSIRO Entomology) – Insect-resistant crops and their potential for mediating environmental change

Dr Graham Edgar (University of Tasmania) on "Marine Biodiversity, Extinction and Environmental Change".

Assoc. Prof. Geoff Gurr (University of Sydney): on "Putting Biodiversity to Work: Pest Management Suppression and other Benefits."

Overview of Provisional Program

Sunday 28 September

Welcome Reception and Registration 5.30 – 7.00pm
Corus Hotel, 156 Bathurst Street, Hobart
Cost: Inclusive for full registrations
Additional Tickets: $25.00 per person

Monday 29 September

Official Opening and Conference Sessions

Tuesday 30 September

Conference Sessions
Conference Dinner 7.00pm – 11.00pm, including pre-dinner drinks, buffet dinner and beverages. Seafood Restaurant Venue, Hobart Waterfront
Cost: Inclusive for full delegates
Additional Tickets: $60.00 per person

Wednesday 1 October

Field Trip - optional
Cost: $50 per person, including transport, package lunch and refreshments for the day, entrance fee where applicable.

Thursday 2 October

Conference Sessions

Friday 3 October

Conference Sessions
Close of Conference 3.00pm

Social Program

To ensure the conference program gets off to a great start light refreshments and finger food will be served during Registration at the Corus Hotel.

Conference Design staff and Committee members will be pleased to recommend restaurants for dinner following the Reception.

Field trip

Since springtime weather in Tasmania is unpredictable we will offer a wet and a dry option, with a final decision closer to the day. Fine weather permitting, we will visit the luxuriant southern forests in the Huon and Arve river valleys, where we will see tall eucalypt forests and rainforests and diverse freshwater fauna. The Warra Long-Term Ecological Research Site adjacent to the World Heritage Area, will be a highlight; see the website at <http://www.warra.com>. Various invertebrate studies are underway here, including research on the fauna of dead wood and forest litter, high canopy insects and the influence of timber harvesting on the ground fauna. We will round the trip off by visiting the Tahune Airwalk and Vistor's Centre. If the weather is wet, a more comfortable option is the Weilangta Forest, an hour's drive east of Hobart, where extensive blue gum forests tower over rainforest remnants in gullies. These are important breeding sites in September for the endangered swift parrot, one of Australia's rarest birds, and a bastion of the threatened broad-toothed stag beetle *Lissotes latidens*.

Important Dates:

Early Bird Registration	3rd June 2003
Abstracts Due	30th June 2003
Abstract acceptance	15th July 2003

Call for Abstracts

Instructions for submitting abstracts and registrations are available on the conference website – <www.cdesign.com.au/entomology>

Abstract Submission

All presenters are required to submit an abstract by Monday 30th June 2003. You will be notified via email if your abstract has been accepted by the 15th July 2003. Authors should state their preference for an oral or poster presentation when submitting their abstract. However, in balancing the program the committee may request that authors present their work in an alternative format. Text only submissions consisting of 300 words are requested. The committee will evaluate all abstracts for inclusion in the Conference Program. All abstracts must be submitted electronically by accessing the conference home page at <www.cdesign.com.au/entomology> and following the links to the *Abstract Submission Form*.

Please contact Conference Design if you have any problems or queries.

See *Myrmecia* pages 27-28 for Registration Form

Audiovisual
All presenters are requested to bring their PowerPoint presentations on CD-ROM. PowerPoint for PC is the only audiovisual facility offered. Macintosh users must ensure their CD-ROM can be read by a PC.

Invertebrate Illustration and Photographic Competitions

Members and non-members of the Australian Entomological Society may submit unpublished and previously undisplayed photographs, drawings or paintings of any invertebrate (maximum of three per entrant) for one of the following competitions. Entries should be brought to the conference at the Corus Hotel, Hobart. Winners will be judged on scientific accuracy, artistic quality, and uniqueness of the image. The Society will have the right to display selected works and reproduce them in its Journals or on goods for sale.

Invertebrate Illustration Competition
Black and white or coloured whole-body illustrations, not exceeding 21 x 30 cm mounted.

Invertebrate Photographic Competition
Black and white or colour photographs not exceeding 21 x 30 cm mounted.

Conference t-shirt

Pre-ordering is advised indicate your size on the Registration Form – cost $20.

Trade Exhibition

The conference will be complemented by an industry exhibition. All morning and afternoon teas and lunches will be provided in this area. If you would like to receive further information about becoming a sponsor or an exhibitor please contact: Penny Archer at Conference Design penny@cdesign.com.au

Registration Fees

Full Registration (Before 3 June 2003)	$430.00
Full Registration (After 3 June 2003)	$480.00
*Full Student Reg. (upto 3 June 2003)	$240.00
*Full Student Reg. (After 3 June 2003)	$290.00
Day Registration (upto3 June 2003)	$160.00
Day Registration (After 3 June 2003)	$210.00

Electronic Registration

There is a secure conference registration form on the web site <www.cdesign.com.au/entomology> suitable for credit card transaction. (You can also forward your credit card details under separate cover). If you wish to pay by cheque please complete the online registration form and forward a cheque in the mail. Cancellations notified in writing by 29 August 2003 will be eligible for a full refund less $100.00. Cancellations notified in writing after this date will not be eligible for a refund but another person may attend the Conference in the original delegate's place.

General Information

We are pleased to announce Qantas has been appointed the official airline for your Conference. As a special conference airfare has been negotiated for delegates, we suggest you contact Qantas Association Sales on the toll free number: 1 800 684 880. Please quote your Association Profile Number: 3570520 A discount of up to 40% off the full economy airfare (excluding taxes) at the time of booking has been negotiated. These discounts are valid on Qantas domestic scheduled services subject to group class availability at the time of booking. Should the 40% discount economy airfare not be available on a required flight the fare may be upgraded to the next available economy class conference fare eg 30% and 10% discounts.

Spirit of Tasmania Travel

The *Spirits of Tasmania I & II*, two passenger and vehicle ferries, operate between Devonport, in the north of Tasmania and Port Melbourne. With their range of accommodation, restaurants and on board facilities, the *Spirits of Tasmania* are a cost-effective alternative means of transport. Take one of the overnight cruises and wake up to a sunrise in Tasmania. Please telephone TT-Line on 13 2010 for all bookings and enquiries or visit their web site at <www.ttline.com.au>.

Hire Car

Auto Rent Hertz is offering special Conference rates on hire cars. Car hire can be arranged directly through Hertz's Hobart office by telephoning 1 800 030 222. Quote booking code 'CONF'. Rates do not include fuel, taxes or levies. Insurance liability applies.

The Corus Hotel

Standard Single/Double/Twin $110.00 per room
Superior Single/Double/Twin $135.00 per room
Executive Single/Double/Twin Room $159.00 (includes continental breakfast)
Delux Suite (King sized bed) $189.00 (includes continental breakfast)
This is a recently refurbished four and a half star hotel which aims to provide high levels of guest comfort and services surrounded by contemporary design and Tasmanian art. It offers a winning combination of great facilities, bars restaurants in a central location close

to the Central Business District, only minutes to the major shopping and entertainment centres.

Chancellor Inn

Single/Double/Twin Rooms $120.00
This 3 1/2 star hotel, located 5 minutes walk from the Corus Hotel, offers good quality accommodation and is situated close to shopping, businesses and all the attractions this historic city has to offer.

Oakford on the Pier

One Bedroom Balcony Apartment $205.00
This is a unique 4 star all suite apartment style hotel, stunningly located on the Elizabeth Street Pier and overlooking the majestic Derwent River. It is just a few minutes walk from Salamanca Place, Battery Point, the Hobart city centre and Hobart's finest restaurants and cafes.

Partner's Day Tours

Saturdays at Salamanca Market
The Market is open from 8.00am and is a fabulous place to have breakfast. There is a variety or café/ restaurants we recommend – Machine Café in Salamanca Square, Zum or Maldini on Salamanca Place – amongst many others. In the Salamanca area there are numerous superior art and craft galleries, boutiques, restaurants and book stores. The Market closes about 3.30pm.
Historic Salamanca Place provides a picture-perfect backdrop for Salamanca Market, which takes place every Saturday in Hobart. Arguably Australia's best market, it is well worth scheduling your time in Tasmania's capital city to coincide with market day.

Bruny Island Wilderness Coast

Monday 29th September
Departs: 9.00 am; *Returns:* 5.30pm
Adults: $130.00, *Children:* $90.00
Untouched wilderness and ocean coast wildlife. The spectacle of massive stark cliffs shaped by the forces of nature. Tasmanian wilderness at its best! Cost includes coach transfers and ferry crossing, morning tea at Morella on Bruny Island, a 3 hour boat trip and a seafood picnic lunch at Hiba – an architecturally most interesting home on a 40 hectare property with outstanding water views. Highlights are the Monument –stark 300 metre high Jurassic dolerite cliffs, Breathing Rock, an explosive blow hole, sea eagle nests, stunning sea caves and rock formations and shearwater (mutton birds) rookeries. Friar Rocks is the home to over 1000 Australian Fur Seals. Also look out for whales and the dolphins that usually choose to accompany the tour.

Port Arthur, Tasmanian Devils, Bush Mill and Settlement

Tuesday 30th September
Departs: 9.15 am; *Returns:* 5.00pm
Adults: $90.00, *Children:* $45.00
The fascinating tour of the convict era comes to life with the opportunity to discover the Tasman Peninsula. Take a ride on the unique steam railway at the Bushmill Steam Railway and Settlement and experience the lifestyle of Tasmania's early timber pioneers before arriving at Port Arthur Historic Site for a guided tour and harbour cruise. The Port Arthur site is a compelling and dramatic reminder of our convict past and the early settlement of the Colony of Van Dieman's Land, now Tasmania. Interpretive and interactive presentations bring to reality the harrowing life of convicts 200years ago. This tour offers maximum time at the Port Arthur site. The tour will also visit the Devil's Kitchen and Tasman Arch. Collection and drop off will be at your hotel. Cost includes entry to Port Arthur, the guided tour and Harbour Cruise, entry to the Bush Mill and Steam Train ride and lunch.

Cadbury Cruise, Bonorong Wildlife Park and Richmond Village

Thursday 2nd October
Departs: 10.00am; *Returns:* 5.00pm
Adults: $90.00, *Children:* $45.00
Highlights of the tour are a cruise on the River Derwent to Cadburys Chocolate Factory where a guided tour and tastings are offered. A coach will then transfer you to Bonorong Wildlife Park offering close up experiences of Australian native animals including quolls, wombats, koalas, sugar gliders, kangaroos, echidnas and cockatoos. The trip will continue to historic Richmond Village where you will have time to explore the village and choose your own activities eg the Old Richmond Gaol, Old Hobart Town, the Maze or just wander around admiring the sandstone Richmond Bridge, homes, churches and craft shops. Please note: No sandals or thongs. The cost includes ferry and coach, a packaged lunch, entry to Cadburys and Bonorong, tea and coffee at the park and on the cruise. Collection and drop off will be at your hotel.

Huon Valley and Tahune AirWalk

Friday 3rd October
Adults: $95.00, *Child*: $47.50
Walk the tree tops of pristine forest at the Tahune Forest AirWalk, having first travelled along the Huon River Valley, a region of tended fields, forest clad rivers and fishing villages set by picturesque inlets. After the AirWalk there will be a visit to a Salmon Farm,

the Apple Valley Centre and a lunch where you can taste the local salmon or venison. Collection and drop off will be at your hotel.

If you are unable to participate in these tours on the advertised days please contact the Registration Desk who will provide information on alternate dates.

AES Executive Meeting #408

17th December 2002

Formal notification of the decision to terminate the Blackwell Contract and to put the Journal out to tender has been made to A. Ross of Blackwell Publishing, by letter.

Members in arrears who are about to be suspended will be e-mailed with final deadline of end of January 2003.

M. Fletcher and G. Maynard are to prepare a report on the move to an independent provider for the AES web site. The Regional Institute is interested and has contacted M. Fletcher.

The executive believes that the membership drive is a prime responsibility of the Regional Councillors and this message will be reinforced in the New Year. There is a need for a brochure advertising the AES. A brief will be prepared for this.

AES Executive Meeting #409

30th January 2003

The Vice President attended an ICE 2004 update meeting in Brisbane. Proposals for the Scientific Program will be finalised at a meeting on 20th March. Blackwell Publishing have submitted a proposal for a special review issue of AJE to coincide with ICE. It is proposed to be the August issue of the Journal for 2004.

A stall is to be reserved for AES promotion at ICE 2004

Bob Debus, NSW Minister for the Environment, announced appointment of Dr Letitia Silberbauer to the 2003-2006 NSW Scientific Committee. The executive thanks Letitia for nominating for this position as representative of the AES.

Members in arrears who are about to be suspended have been e-mailed with final deadline of end of January 2003. Some members have responded, paid arrears and some have also resigned. 53 members are in arrears for 2002 and will be suspended on 31st January 2003.

New guidelines for the Phil Carne Prize were submitted for publication in *Myrmecia*. A 1-page A4 size poster for use in advertising the prize is being prepared. A list of institutions will be compiled from the AES database and a nominal contact at each site will be sent promotional posters. Assistance from Regional Councillors and Promotions Manager to promote the prize will be sought.

Tender documents for publishing of Australian Journal of Entomology will be received by end of February. Main members of the assessment team will be A. Austin, J. Ridsdill-Smith, P. Allsopp and the core executive. Documents will be opened on 28th February, collated and arranged in format for parallel comparison. Documents will be circulated to the team in the first week in March, and comments are to be received by end of March. Candidates will be advised of the outcome at the end of May.

New members

Dr Stephen L. Clement, USDA Washington State University (proposed: J. Ridsdill-Smith, seconded: O. Edwards). Research Entomologist, Adjunct Professor, 27 years in entomology research with over 150 scientific publications.

Miss Vanessa Bosco (proposed: D. Hopkins, seconded: G J Baker). Interests in insect behaviour and behavioural ecology. Fruit fly ecologist with SARDI working on the effect of protein feeding on the 'calling' behaviour of the Mediterranean Fruit Fly (*Ceratitis capitata*).

Ms Elanor Mahon, Pakenham, Victoria (proposed: N. Endersby, seconded: P. Ridland). Interests in spiders, ants, insect ecology, human disturbance impact on communities.

News from the ICE

Congress planning is gathering momentum. In late March the bulk of local section coordinators and Science Program Committee met in Brisbane along with the executive to thrash out the structure of the Science Program for the Congress. Under John LaSalle's chairmanship great progress was made! The outline of the Science Program will appear in the second major announcement due mid-year. Look out for the high profile internationally representative plenary speakers as well exciting symposia being organised by leading entomologist from around the world across all areas of entomology. As indicated from the outset we have left space for contributed papers. So when you see the program we look forward to receiving your paper contribution. Do encourage your overseas colleagues to do the same.

The section coordinators and Science Program Committee have put in a lot of work to date organising the Science Program. I am sure members of the society join with the executive in thanking these people for their efforts and that the spirit of self sacrifice among entomologists continues despite the best efforts of

'dry' Thatcherite economists!
Many thanks to the society members who took advantage of the super early bird registration offer. Your early investment in the Congress has gone a long way to keeping the organising of the Congress viable. Our thanks to Ian Endersby for handling the extra paper work on these registartions. Much appreciated. Max Whitten and the finance committee continue to chase sponsorship dollars for the congress. I am sure Max would appreciate suggestions on how to get blood out of stones!
Promotion of the Congress to overseas colleagues has been going well. Jon Gordon from Carillon Conference Management and Simon Lawson recently travelled to Morioka, Japan, to promote the Congress to 900 Japanese colleagues at the Applied Zoology and Entomology conference. Our thanks too to Gerard Moritz for volunteering to highlight the Congress at the recent meeting of Germany entomologists. Congress promotion also took place at a recent meeting in New Zealand and South Africa. If any member of the Society is attending a conference over the next year please get in touch with Tony Clarke chair of the Media and Promotions committee to arrange to take a Congress Promotional pack.
Only 15 months to the ICE in Brisbane to go. Do continue to support this major entomological event. We appreciate it.

Meron ZALUCKI and Tony CLARKE

Entomologists!

A list is being prepared of postgraduate entomological projects currently being undertaken in Australian institutions. We do these surveys approximately once every two years. The list will be published in *Myrmecia* over the next two issues. Please send details of your PhD, Masters and Honours projects (2001 and 2002) to your local Regional Councilor or Tish Silberbauer NOW - or at least by the end of August 2003. Regional Councilors will then forward their combined lists to Tish for final collation.
Details required are:
Student's name
Project title
Degree (e.g. Ph.D., M.Sc., Honours)
Department and Institution

e.g. Joe 'Blowfly' Bloggs
Entomological apathy or aestivation?
M.Sc., Zoology Dept., University of Wishful Thinking

Hope to hear from you soon!

Tish SILBERBAUER
email: <Lsilberb@metz.une.edu.au>

Whiteflies of the world unite

The 3rd International *Bemisia* workshop was recently held in Barcelona, Spain, from 17 – 20 March. Australian entomologists in attendance included **Robin Gunning**, **Marc Coombs** and **Paul de Barro**. The workshop covered areas such as biology, ecology, chemical and non chemical control, insecticide resistance, integrated pest management programs and virus-vector relationships. There was a particular focus on biological control, research being presented on the parasites *Eretmocerus* spp. and *Encarsia* spp. And the predators *Macrolophus caliginosus* and *Chrysoperla carnea*.

Emma COTTAGE

ABRS staff changes

Mary Colreavy, the new Director, ABRS, will be on deck in early June. An honours graduate in zoology, Mary comes to ABRS following a very brief brush with centipede taxonomy and an extensive career in park management, core public service and university administration. Both Mary and the new business manager, Stephen Dwight, are welcomed at a time when intense budgetary pressures make essential the strong positioning of ABRS within the Federal Department of Environment and Heritage.

Alice WELLS
Acting Director, ABRS

Entomology educators – generating enthusiasm; generating entomologists

I recently did something I haven't done in a while – I spent a couple of weeks demonstrating entomology for an external second year entomology course. It was a wonderful experience – the lecturer in charge of the course had done a great job in designing a course that made entomology accessible for students who had never done entomology before, and the students were enthusiastic. At the beginning of the course many of the students couldn't differentiate between arachnids and insects; by the end of the course they were able to correctly key out insects to order and family. That's a great outcome from an external course with just a week of intensive practical work. The thing that made the experience wonderful for me, as a demonstrator, was that the course engendered in the students an enthusiasm and interest in insects. In fact, a vox pop of previous students shows that the experience of the one entomology subject was very positive for them and has sparked a long-lasting interest in insects, even though very few have gone on to do entomology-related postgraduate topics.
This got me to thinking about the value of quality teach-

ing in entomology and how underrated it is. Many entomologists are born with a passion for insects and other invertebrates, but a great many others became entomologists only after they were inspired by lecturers, supervisors and mentors, as was the case for myself.

I am wondering whether there is a place in the Entomology Society for honouring entomology educators and the fine job they have done in inspiring, encouraging and creating generations of entomologists over the years.

It also makes me wonder whether the current decline in the membership of the Entomology Society and the lack of younger members might have something to do with the decline of entomology teaching at universities. As someone who is currently job-hunting, I have noticed that positions for entomologists are very seldom advertised and positions for teaching entomologists are even rarer. In the last 10 or 15 years entomology at university level has shrunk and almost disappeared. Places where it used to be possible to do almost an entire undergraduate degree in entomology no longer offer that option. Places where it used to be possible to do specialized entomology courses at second and third year now offer only one or maybe two entomology courses.

Students still encounter entomology at undergraduate level, but now they do so in different guises. They might be doing an agronomy course where pest management is a module, a soil ecology course where insects are presented as representatives of various trophic levels, or an ecology course where insect activities are presented as exemplars of ecological processes. There is absolutely nothing wrong with this approach, but it seems to me that the unintended outcome is students who consider themselves to be agronomists, soil scientists and ecologists and don't identify themselves as entomologists. Since they don't consider themselves to be entomologists, they do not feel any affinity with the Entomology Society or the Society journal.

The Entomology Society may not have much leverage when it comes to changing government policy in funding priorities and university policy in teaching at an undergraduate level, but I believe that the Society is in a position to examine how it markets itself. Maybe it is a good time to consider the impacts of the changing educational climate from traditional discipline-based degrees to more vocationally-oriented, multidisciplinary degrees and to target membership drives accordingly. For example, I have heard early career researchers say they don't want to join the entomology society because they're "not real entomologists", by which they mean that they're neither taxonomists nor pest control researchers. They believe that their work as biodiversity researchers, behavioural ecologists, evolutionary biologists, physiologists, geneticists, and so on, is not of interest to the folks who they perceive as belonging to the Society. Maybe this is a problem in perception that astute marketing could possibly overcome?

Tish SILBERBAUER

REVIEWS

Vincent Resh & Ring Cardé (Editors) 2003. *Encyclopedia of Insects*. Academic Press: San Diego California. 1265 pp. ISBN 0-12-586990-8. Price in Australia A$214.50 (including GST). Contact: <service@elsevier.co.au> [**NB AES Members can obtain a 10% discount and free delivery by telephoning Elsevier Customer Service Department at 1800 263 951 and quoting this Review**]

This extensively illustrated, monumental work comprises 1265 pages and 1000 tables and figures, with 271 individual entries organised alphabetically and written by more than 250 contributing authors from 17 countries. There is an extensive 18 pp. glossary and 40 pp. index, and entries are linked by cross-references and further reading. The encyclopaedia does not restrict itself to insects, with sections on the entognathous hexapods, mites, spiders, and other terrestrial arthropods. Each entry is organised with an introductory paragraph that defines the topic, and then major headings highlight important subtopics that are discussed.

Articles range from broad general topics such as biodiversity (Stork), biogeography (Zwick), anatomy (Gordh and Hedrick), phylogeny (Cranston and Gullan), nomenclature and classification (Thompson), and each of the orders. There are more than 50 articles on aspects of insect physiology and there are also entries with narrower scope such as ants, aphids, honeybees, boll weevils, codling moths, etc. For teachers, there are entries on Teaching Resources, Insects as Research Tools, Museums and Display Collections, Insect Zoos, History of Entomology, Entomological Societies, Collection and Preservation, as well as all the content of an introductory text. For evolutionary entomologists, there are chapters on coevolution (Futuyma), island biogeography and evolution (Roderick and Gillespie), the fossil record (Grimaldi), industrial melanism (Majerus), genetic variation (Roderick) and sexual selection (Kaneshiro). Articles on integrated pest management (Prokopy and Kogan), regulatory entomology (Dowell), and extension entomology, medical entomology (Edman) insecticide resistance (Devine and Denholm) and invasives (Simberloff) verify the critical importance of

insects to mankind. There are even eclectic articles such as the ones on Folk Beliefs and Superstitions, Commercial Products from Insects, Insects as Food, and Insects in Movies.

Local content is considerable given the size of the Australian entomological community, examples being Nigel Stork on biodiversity, Laurence Mound on thrips, David Rentz on Orthoptera and Grylloblattodea, Max Moulds on cicadas, Tim New on conservation and James Ridsdill-Smith on dung beetles. A great strength of the work is that without question the authors are world authorities in their respective fields. The downside is that (as you would expect), writing styles vary between articles, from bright and enthusiastic to erudite and detached. I detected very few typographical errors.

It is tempting to be caught up in a wave of hubris about the vibrancy and progress of entomological science while delving into the Encyclopaedia. However, it is sobering to remember that while this volume brings together all that we know about insects, in fact we know very little. We have only named around 10% of insect species (even given conservative estimates of their total number) and we know precious little more about most of those 10%. There are probably only a few thousand species that we know very well at all, and a small fraction of those we know so well that we have a reasonably detailed knowledge of their role in ecosystems. Thus a major intellectual tradition that holds this Encyclopaedia together is extrapolation from the known to the unknown. How much do we really know about insects? What will the 2103 edition of this Encyclopaedia look like? How many surprises will have been uncovered, and how will the biosphere and its insect diversity be faring after another century in the grip of the current mass extinction?

I have only two complaints: the encyclopaedia is so expensive that many students and interested non-professionals will not be able to justify its purchase. However, the book does cover 70% of animal life, and such large and lavishly illustrated hard cover tomes cannot be produced cheaply. My other concern is to do with the photographs. Mostly they add significantly to the text (eg. p. 876 Fig. 1), but in other cases they have been reduced too much, or are of poor quality. For example p. 13 Fig. 1, p. 19 Fig. 6, p. 333 Fig. 51, p. 334 Fig. 55, p. 336, Fig. 62, P. 850, Fig. 1. This book is a must for professional entomologists, and the one entomological book to have if you are interested in insects or in terrestrial biodiversity. Once started on a topic, and moving from article to article via the related threads, it is hard to put the encyclopaedia down. This is one book to have at home for those awkward dinner party questions, you know the ones "you're an entomologist so you will know which insect transmits leishmaniasis?" And if you guessed mosquitoes you'd be wrong. In summary, I will stick my neck out and say that it is the most significant entomological publication since the last edition of *Insects of Australia*. My only question is why has it taken so long for such an encyclopaedia to appear?

David YEATES
CSIRO Entomology

AusGrass - Grasses of Australia. CD-rom by D Sharp & BK Simon. Australian Biological Resources Study /Queensland Environmental Protection Authority. Published by CSIRO Publishing/ABRS/ Qld EPA. Price AU $99.00. ISBN: 0643068619

For those of us who work on phytophagous insects, identifying food plants is an essential professional hazard. Increasingly, LucID keys are providing us with tools to facilitate such work, to educate us, train us, and gradually expand the horizons of our biodiversity understanding. Grasses are too often just the green stuff on which we walk, and even when we find insects feeding on them we remain content to list the host as "grass". For example, a very large proportion of thrips species in this and most other countries breed only on grasses. Presumably each species breeds only on some of the available grass species, but we do not know which grasses act as sources of those "grass thrips" that are pests of cereal crops. This CD-Rom, *AusGrass*, provides us with the opportunity to refine such ineffective generalisations, and to come to a better understanding of how insects exploit this vast range of plants. The system helps you identify 1323 species of native and immigrant grasses. It is fully illustrated with drawings and photos, each species is described and its distribution mapped, a comprehensive glossary is provided, there are extensive notes to help the user avoid many errors, and navigating through the system is a delight. The LucID key is intuitive, but a dichotomous key is also provided for those who prefer to do it the hard way. ABRS, the provider of much of the funding and staff time underwriting the project, must be congratulated and thanked as much as the authors and Queensland EPA. Between them they have provided an opportunity to so many people, horticulturalists and entomologists being just a small fraction, of coming to grips with this huge segment of Australia's biological diversity. For me, *AusGrass* will now take its place on my bench alongside *Wattle* and *Euclid*, as an instructive, entertaining and essential tool in the study of insect host relationships. Displacing expen-

sive and cumbersome "Flora" volumes, it will be our prime source of information on that green sward on which we all depend.

LAM

Is the anti-GMO stance warranted in Australia and New Zealand?

Genetically modified organisms (GMO's) have generated intense interest; among the lay-public and environmental communities, because of potential adverse environmental and health impacts; within scientific circles that envision revolutionary construction and application of novel organisms for pest and health management; and among legislators facing challenging new ideologies regarding the assessment of risk, philosophy of creation issues, and identification and protection of intellectual property rights as this new technology develops and reaches field application phases. The subject and associated issues are so well entrenched in mainstream media that they are commonly subjects of discussion in newspapers, magazines, popular books, T.V., and radio.

Genetic engineering (GE) of plants, animals, and micro-organisms differs from traditional genetic selection for desirable traits in a number of ways: (1) genetic engineering necessarily involves *in vitro* manipulations; (2) GE requires that you already have certain information (DNA sequences or position of restriction enzyme sites) for the relevant region of DNA that is to be manipulated; (3) GE requires that you physically isolate small but useful amounts of DNA from the region of interest for manipulation; (4) GE typically involves the characterization of the genotype prior to the analysis of the phenotype, whereas in traditional genetic breeding, only individuals with a certain phenotype are analyzed; (5) viruses, plasmids, microinjection, or gene guns are used to introduce foreign DNA into target organism rather than recombination using gametes or compounds that cause mutagenesis from which viable organisms are then screened.

Australia, Europe, and New Zealand (N.Z.) have largely taken an anti-GMO stance especially towards products that use this technology for managing damaging pests and diseases in crops grown for human consumption. At the other extreme, the U.S.A. has developed numerous GE crop plants (e.g., Bt expressing cotton and corn) that are being commercially exploited. Public abhorrence towards this technology is significantly less in USA than elsewhere in the world. Why has this polarization of opinions occurred? Is there good evidence to be cautious about existing GMO's used in agriculture? What are the potential implications of wholesale adoption or avoidance of GMO's for managing pests affecting human health, agriculture, and wilderness areas?

Polarization of Opinions: The "Precautionary Principle" has figured prominently in the GMO debate. The definition for the Precautionary Principle from the 1998 Wingspread Conference states: *"When an activity raises threats of harm to human health or the environment precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically."* Australia and New Zealand have a historical cynicism towards technologies that promise better environmental health and have embraced the Precautionary Principle. This has come about, in part, because of highly publicized "agricultural" disasters that have caused irreparable environmental damage (e.g. cane toads released in Australia for beetle control in sugar cane; stoats released in N.Z. for rabbit control). It is perceived that GE may result in similar travesties once GMO's are released in these countries. In the U.S.A., a diametrically opposed attitude has developed. GMO's are the antithesis of conventional pest control strategies and progressive growers are non-traditionalists, business oriented, and adopt scientific advances more readily than growers elsewhere. Adoption of GE crops has not been pursued out of environmental responsibility, but to maximize industry profits and save growers money. Thus the agri-industry has given GE researchers their enthusiasm, political weight, and money and the technology has advanced rapidly.

Strength of Evidence for GMO's Adverse Environmental Impacts: John Loosey et al., (Nature, May 1999) showed in the lab that extremely high densities of Bt corn pollen on milkweed plants killed monarch larvae. These simple experiments demonstrated potential risk and generated intense public concern that the Monarch Butterfly, a treasured U.S. insect, was threatened by a novel human-induced environmental perturbation mediated via agriculture. Recent, and more realistic field studies have shown that corn pollen is heavy & won't blow great distances from corn fields into weedy areas where milkweed plants are common. Densities of Bt pollen on milkweed outside corn fields are not high enough to kill monarch larvae, and larvae tend to feed on younger upward pointing leaves that cant catch airborne pollen. Additionally, corn pollen shed & larval activity don't coincide to a significant extent, and commercially used GE corn plants release pollen that has little toxin and can't kill monarch larvae at observed field rates. In the U.S., cotton & corn, are very high users of conventional insecticides and usually rank in the top 10 most heavily treated crops. In commercial crop-

ping systems, transgenic plants may increase biological control efficacy as a result of reduced broad-spectrum pesticide use. However, tritrophic interactions between transgenic plants, herbivores that have ingested toxins, and natural enemies attacking these poisoned pests have raised issues concerning ecological compatibility and sustainability of these systems. Laboratory experiments indicate that predacious green lacewing larvae fed Bt toxins experience significantly higher mortality than control specimens not fed Bt toxins. The Bt toxins were either present in lepidopteran prey feeding on corn plants expressing toxins, or in artificial diets with exact known quantities of Bt toxin added. Greenhouse studies and multi-year field studies in the NE, SE, SW-USA have failed to demonstrate any adverse impact on natural enemy densities & activity in transgenic corn & cotton when compared to non-transgenic control plots. In fact, natural enemy activity is apparently greater because pesticide use has declined in some instances by > 75%. Furthermore, viruses (e.g., baculoviruses expressing scorpion neurotoxins) and arthropods (mosquitoes expressing GFP) that have been genetically engineered are competitively inferior to unmodified wildtypes and exhibit reduced longevity, fecundity, and persistence.

Embrace or Shun? GE has great potential for addressing agricultural and environmental problems unique to Australia and New Zealand. One research avenue being vigorously pursued by both countries is the development of host specific micro-organisms that reduce the reproductive potential of pestiferous vertebrates, in particular mammals, by sterilization induced as an immune system response (termed immunocontracpetion or immunosterilization). Artificial sterilization of rabbit populations suggests that a sterilizing myxoma virus will need to infect >80% of females to reduce rabbit densities to levels that are no longer damaging. There are obvious advantages to this technology; it may reduce or eliminate broadcast poison and shooting programs. Consequently, immuno-contraception is potentially humane, sustainable, self-distributing and cost effective. Conversely, there are some well reasoned disadvantages to this technology. The general public fear of engineered viruses will be a major impediment to release of any potentially useful GMO. Perhaps the most worrying are unintended consequences or "revenge effects" that may manifest themselves either through novel selection pressure on wild populations or mutations that cause non-target impacts. A wildcard in this arena is potential bioterrorism where individuals illegally smuggle and release GMOs into areas where their presence is generally not desired. Immunosterilizing or lactation prevention GMO's under investigation for possum control in N.Z. could be a potential threat to native Australian fauna. N.Z. farmers have clearly demonstrated the ease with which micro-organisms (eg. rabbit calicivirus) can be smuggled between Australia and N.Z. Classical biological control may have a lot to offer stakeholders grappling with issues concerning evaluation of risk and movement of GMO's. Following criticism by prominent ecologists, biological control practitioners are grappling with issues regarding the safety of natural enemies post-release, and assessment of invasion potential into native habitats, damage to non-target species, and alteration of ecosystem functioning through the formation of novel reticulate food web linkages across trophic levels that are mediated by exotic natural enemies. Increased quantification of project value, assessment of potential risk, and evaluation of agent safety can greatly improve the justification for use of GMO's. Consortiums of multi-disciplinary teams can effectively address issues pertinent to GE projects as group processes provide guidance and assistance, which are needed for prudent scientifically-based decision-making.

Mark S. HODDLE,
University of California, Riverside.

Vanessa Bosco (see S.A. News)

REGIONAL NEWS

AUSTRALIAN CAPITAL TERRITORY

ANIC

The ANIC's Pilbara (WA) expedition is underway, funded by the Schlinger Foundation. On 14 April the members of Group 1 - **Tom Weir**, **Rolf Oberprieler**, **Ted Edwards**, **Frances FitzGibbon**, **Christine Lambkin** and **Barry Richardson** - set out in two vehicles for the 5-day drive. The entomologists plan to spend a week each in Karijini and Millstream National Parks, using a variety of collecting techniques to sample the fauna. At the beginning of May, all except Christine, who will stay for the duration, will be replaced by the second group of **Jacqui Recsei**, **David Yeates**, **Noel Starick**, **Andreas Zwick**, **Adam Slipinski** and **Kim Pullen**. Target taxa are moths, therevid and bombyliid flies, salticid spiders, weevils, and aquatic bugs and beetles.

Adam Slipinski and **John La Salle** spent 2 weeks in March in the Pacific islands on an ACIAR project, Development of Forest Health Surveillance Systems for South Pacific Countries and Australia. The aim of this project is to build a capacity in pest surveillance and diagnostics for plantation forestry in the region. Adam and John were accompanied by several pathologists and entomologists from Queensland Department of Forestry and Forestry Tasmania. An initial workshop in Fiji was followed by visits to collaborating workers and plantations in Tonga, Samoa and Vanuatu. Adam and John returned exhausted by the schedule of 17 connecting flights, relieved only by an afternoon's coral reef snorkelling.

Gerald Moritz of Halle, Germany, visited **Laurence Mound** for three weeks in February to further develop a new thrips identification system in Lucid, incorporating molecular methods for about 80 pest species. They also made a quick visit to south eastern Queensland, to discuss Lucid and Phoenix developments with **Geoff Norton** at UQ, and to collect thrips in the brigalow country for chemical analysis. **Mark Hoddle**, a biocontrol specialist from Riverside, California, has moved into the thrips room for three months, to develop with Laurence a taxonomic account of about 20 *Scirtothrips* species found in Australia, including the South African Citrus Thrips that is now established in south east Queensland. Mark has a paper in *Conservation Biology* on the effect of biocontrol programmes on non-target organisms, arguing that these effects have often been overstated, and that biocontrol is a valid and at times the only option.

Kim PULLEN

NEW SOUTH WALES

University of Sydney Orange (USO)

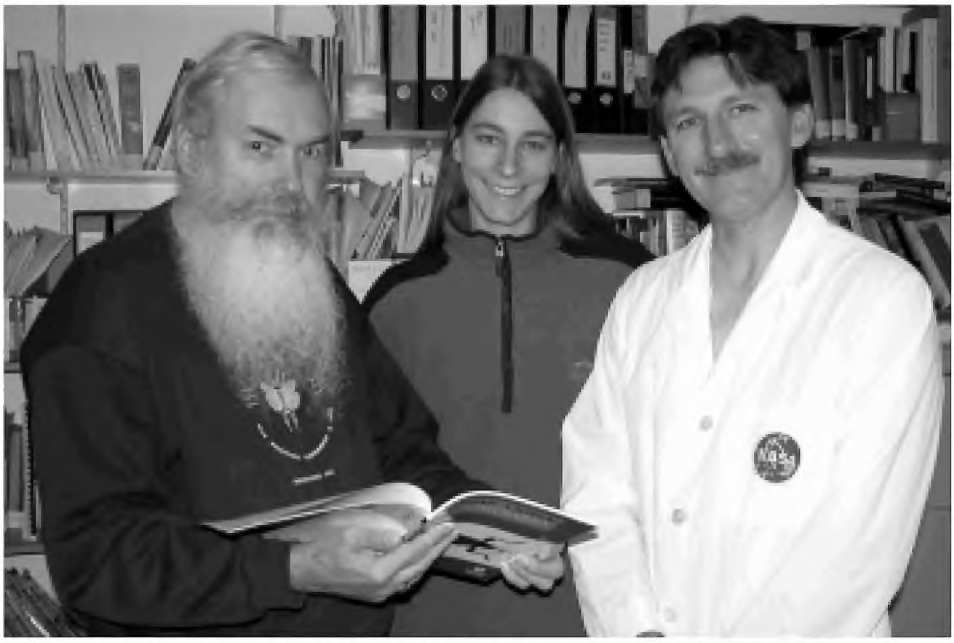
Leighroy Pillington attended the 8th International Congress of Plant Pathology in Christchurch 6.- 10 February presenting three posters on his research into phytoplasma disease Australian Lucerne Yellows (AluY). Leigh reports that it was a "great" meeting where he managed to catch up with "old acquaintances" while also making new contacts. Leigh emphasised that USO and Orange is isolated from any other phytoplasmologists and the congress provided an extremely valuable experience to meet and discuss many issues with other students, researcher/scientists working on phytoplasmas and the vectoring of the pathogen.

Birgit Schuerrer and **Holger Loecker** joined the USO Pest Management Group recently when Birgit commenced a PhD with **Geoff Gurr** and **Murray Fletcher** (see below). Hoelger, a USO Honorary Research Associate, has been working on a large paper that he brought with him from Austria, and only this week reported that he has sent the ms off for publication.

Other exciting news at USO includes the recent announcement of the approval for establishment of the Rural Management Research Institute. The concept of this Institute emerged from the committee that produced a document entitled "Rural Strategies; Strategic Directions for the University of Sydney Orange Campus in 1999. While this institute proposal has been in gestation for some time, it will provide an injection of funding to the tune of $500,000 over the next three years. Most importantly in this proposed allocation of funding is monies for three PhD scholarships... So interested parties might like to "watch this space" in coming issues or visit the USO website for further details. FYI Geoff currently has three postgraduate projects on offer!

NSW Agriculture
Orange Agricultural Institute

Late March in Orange is usually a delightful part of the year so it was an ideal time for NSW Agriculture to bring together its plant protection staff for a two-day workshop. Held at the department's Head Office, the meeting was the first in "living memory" to include both plant pathology and entomology disciplines from throughout the State. Co-organised by entomologist **Andrew Tomkins** and plant pathologist Shane Hetherington, it covered many aspects of NSW Agriculture's plant protection activities from biosecurity to molecular biology. There were presentations from several guests including consultant **Vic**



Murray Fletcher, Birgit Schürrer and **Geoff Gurr** working through a recent article on Australian Aphrophoridae - if you didn't think taxonomy was rocket science, check out the logo on Geoff's labcoat! (Photo by **Tom Braz**, NSW Agriculture)

The Fruit Fly Team
Christine Neale, Eddy Hamacek, Thelma Peak, Annice Lloyd and **John Chapman**
at the Australia Day Medallion Presentation Ceremony. *Courtesy of QHI Update*

Edge. The workshop dinner was an enjoyable interlude to the solid technical program. There was strong support from staff for a continuation of the initiative with biennial meetings preferred.

Graham Thwaite visited the Gosford area twice during March, firstly to meet with **Stephen Goodwin** and **Marilyn Steiner** to discuss western flower thrips and later to appear on the same field day program with Marilyn to discuss pests in stone fruit. Western flower thrips emerged as a serious problem in stone fruit in the New South Wales central coast area during the drought of 2002/03. Marilyn and Stephen assisted the local fruit-growing industry with their knowledge of the pest from the extensive work they have done in ornamental and strawberry crops. Tamworth based entomologist **Adrian Nicholas** spent a few weeks in Orange in March and April assisting head office staff. While in town he caught up with colleagues at the Institute.

Birgit Schürrer has joined the Collections Unit to undertake a three year ABRS-funded project to revise the Australian Cixiidae. The project, which will lead to a PhD through the University of Sydney, Orange, is jointly supervised by **Murray Fletcher, Geoff Gurr** (University of Sydney, Orange) and **Marie-Claude Larivière** (Landcare Research, Auckland). There is considerable world-wide interest in the Cixiidae at the present time, with at least four European workers undertaking taxonomic research on the family and available to support Birgit's project. In addition, there are two further PhD projects on Cixiidae, one in Berlin focussed on the ecology of cavernicolous cixiids, including Australian species of *Solonaima*, and another due to start in Paris undertaking a molecular study of the phylogeny of Cixiidae compared with the phytoplasmas they transmit. With the student undertaking this latter project coming from Brazil, the current international effort to understand the Cixiidae involves researchers and students in Australia, New Zealand, Brazil, France, Austria, Germany and Russia.

John MACDONALD

Dept of Land, Water and Crop Sciences, The University of Sydney

The entomology group has three Horticulture Australia Ltd. (HAL) projects, plus a project initially being funded from the Department's resources. During late November 2002, a PhD student, we call him Swarmi, started his project on population dynamics of western flower thrips in sprayed compared to unsprayed situations and with or without competition from other thrips.

The HAL projects are:

1, Management of Elephant Weevil Borer (*Orthorhinus cylindrirostris*) in cultivated blueberries. HAL is matching a voluntary contribution from Blueberry Farms Australia. The project is managed by **Harley Rose**, and involves the biology and management of this large, up to 2 cm in length, native weevil. The larvae tunnel in the crown of the blueberry bush, severely reducing the productive life of the bushes, from 20 years to 7. Replanting costs $40,000 per hectare, so this represents a significant cost. There are few natural enemies, especially of the larval stage. There are major varietal differences in susceptibility to the weevil, suggesting cultural controls are possible. Targeting insecticide applications to the lower part of the bush where 98% of exit holes were found, is another strategy being evaluated.

2, Management of WFT, other vector thrips and Tospoviruses – an umbrella project. HAL is matching a consortium of levy industries, plus some voluntary contributions. The University of Sydney part is managed by **Alan Clift**, in collaboration with **Grant Herron**, Elizabeth Macarthur Agricultural Institute, NSW Agriculture (the insecticide section of the project) and **Roger Jones**, WA Department of Agriculture (the other vector thrips and tospoviruses section). This project in one form or another has been going on since mid 1997 and is due to finish late 2003. The insecticide section arose because Grant indicated that existing, registered rates of many insecticides were not high enough to control WFT (*Frankliniella occidentalis*). NRA indicated they required efficacy and residue data to support Grant's claims and that the data should be generated in NSW and WA. The vector thrips and tospovirus section arose because TSWV was a problem well before WFT arrived and that all vectors needed to be worked on to manage the disease. Since 1997, a second tospovirus, vectored by melon thrips, *Thrips palmi* was found in Bundaberg and this year a third tospovirus, Iris Yellow Spot, vectored by *Thrips tabaci* was found. Cultural controls, as well as chemical use, have a major role in management of both vector thrips and the diseases. Discussions will be held in November to explore the options available for further research on what is clearly an expanding problem.

3, Review of use and recommendations for registration of pesticides in the Australian mushroom industry. HAL is matching a consortium of Australian Mushroom Growers Association levy funds plus voluntary contributions from Sylvan (Australi) Pty Ltd and Farmoz Pty Ltd. The project, managed by Harley and Alan, involves growing mushrooms and generating efficacy and residue data for existing and new pesticides for use within the mushroom industry. The need for this project started with the NRA existing chemical review, which was compounded by the require-

ments to specify use patterns under industry-wide HACCP (Hazard Action and Control Points). The project is initially for two years, but there is the possibility to continue, subject to successful outcomes. There are also options to grow other edible/medicinal fungi. The first load of compost arrived on Friday 18 October. Alan reported back to the mushroom growers the following week at their national conference in the Hunter Valley (no, he did not select the venue). They are now growing their third crop. This facility will be one of four in the world to undertake this type of work, but unlike the other three, this will specialise in pest and disease work. The Australian mushroom industry recognises it cannot rely exclusively on pesticides, so while utilising what is available as effectively as possible, it wants to have as many options as possible.

Fruit Fly Research Centre, School of Biological Sciences, The University of Sydney

The Fruit Fly Research Centre, managed by **Merryl Robson**, has two federal Australian Research Council grants with industry partners currently operating.

1, Eradicating fruit flies (*Bactrocera tryoni*) from the Fruit Fly Exclusion Zone. Total grant $344,000 over 3 years (2001-2003) with collaborators SA, Vic and NSW State Departments of Agriculture and Riverina Citrus. The project is managed by **Alfie Meats**. The Fruit Fly Exclusion Zone (FFEZ) borders NSW, Vic and SA, and is managed by the 'TriState Agreement'. Any *B tryoni* infestation within the FFEZ results in suspension of exports from crops within a 30-80 km radius, depending on the importing country. Since 1998/99 there have been many severe breaches of the zone. The Fruit Fly Research Centre has developed a novel DNA technique, based on microsatellites, to analyse movement of fruit flies in Australia: further, it has been involved in a detailed study of the temporal and spatial distribution of fruit fly trap catches during outbreaks in NSW, SA and Vic. This project was designed to establish the sources of threats to FFEZ integrity, develop appropriate strategies of eradication and community awareness, including rational deployment of quarantine strategies. The project combines the existing strengths of the group, enabling the validity of associations suggested from the temporal/spatial data to be tested using microsatellites from outbreak flies, as well as those from populations from towns near the exclusion zone.

2, Fruit fly pests in northwestern Australia: invasion, hybridisation or evolution? Total grant $340,000 over 3 years (2002-2004) with collaborators WA and NT State Departments of Agriculture and Kununurra Pest Control Committee. The project is managed by **Stuart Gilchrist**. In northwestern Australia, recent events suggest that a new and serious fruit fly pest is now present, where previously none existed. Due to difficulties in accurate identification, we do not know whether these new pest fruit flies are endemic fruit flies that have changed their behaviour, invasions of Queensland fruit fly, or hybrids between them. This project will use DNA microsatellites to distinguish between these possibilities. It will also establish whether the different species involved are actually different species, or should be regarded merely as different races. Such distinctions are important both scientifically and for export quarantine purposes.

Alan CLIFT

NORTHERN TERRITORY

Department of Infrastructure, Planning and Environment Parks & Wildlife Service

The rare and spectacular Leichhardt's grasshopper, *Petasida ephipiggera*, looks like falling off the NT threatened species list even before the list is formally published. **Colin Wilson** and **Piers Barrow** have found new populations and host plants that have significantly increased the known range of the species. Meanwhile, Colin has been roaming around remote corners of Arnhem Land with **Richard Weir** and local rangers from the Dhimurru Aboriginal Land Management Association looking for the endangered Gove crow butterfly, *Euploea alcathoe enastri*. If it were easy to find, it wouldn't be considered endangered. In a week of diligent searching they captured 4 adults, and are waiting to see what comes of a bunch of eggs and young larvae they collected off possible host plants.

Department of Health and Community Services, Medical Entomology Branch.

The branch has had a busy wet season, with considerable salt marsh mosquito helicopter and ground control operations. The effort has been productive, with the figures of Ross River virus cases for this wet season in Darwin relatively low compared with other years.

A highlight of the early dry season has been the risk importation of *Aedes albopictus* in the new East Arm Port area. The importation occurred in plastic wrapping of pipes in a crate ex Singapore. The importation was quickly dealt with by a combined AQIS, Medical Entomology operation of fogging, receptacle surveys and increased surveillance. **Gisi Lamche** and **Jane Carter** handled the fogging and surveillance operation, together with assistance from **Jennifer Grigg,** one of our newly recruited staff members.

Peter Whelan fielded all the media aspects, with some fine footage of **Leah Stratford,** our other new staff member, setting the additional mosquito traps around the wharf area.

Gisi and Jane were also active in *Aedes aegypti* surveys around Katherine and Mataranka and are steadily working through all the larval samples to make sure the NT remains free of this dengue mosquito.

Allan Warchot has been conducting surveys with Jane, Jennifer and Leah, around the site for the new Gas plant at Wickham Point in Darwin Harbour. Not an enjoyable experience after a boat ride across the harbour and battling through the mangroves and monsoon vine thickets with a load of dry ice and mosquito traps. It was only a rumour that one group was lost for a while.

The Murray Valley encephalitis surveillance program picked up the first evidence of flavi virus (Kunjin) for the season from the sentinel chickens. The media attention to the press release alert was an entertaining interview piece with **Peter Whelan** and the sentinel chickens, who said quite a few clucks about what they think of working 24 hours a day, seven days a week for Australia.

Nina Kurucz has been active in compiling the branch regional reports for the last year, and she and Peter have been busy with a branch reorganisation and all the documentation that goes with it. Nina went off for a well earned two weeks in April to north west Australia, fishing not mossie hunting.

The branch had an enjoyable visit from the Army in March in the form of **Bob Cooper**, **Steve Frances, Darren Waterson** and collaborators **Nigel Beebe, Daryl McGinn and Andrew van den Hurk** working on new repellents and tent treatments in the Mary River area.

CSIRO Sustainable Ecosystems, Darwin.

Alan Andersen, **Tracy Dawes-Gromadzki** and **Ben Hoffmann** attended the Ecology 2002 conference in Cairns last December. Last year Alan commenced a pilot invertebrate monitoring program in NSW rangelands, in collaboration with NSW Land and Water conservation, and he presented the preliminary results at the conference. Tracy presented a paper on soil macroinvertebrates and landscape function in north Australian savannas, and Ben presented the results of the joint CSIRO and Parks Australia North project on the eradication of African Big-headed ants in Kakadu National Park.

Late last year Tracy was selected by the Australian Academy of Science as one of 20 outstanding young researchers, to take part in the Academy's "Video Histories of Australian Scientists' program". This program records interviews with outstanding Australian scientists for current and future generations. The Academy flew Tracy to Canberra to record the interview in December. The interview, in the form of a video and a transcript placed on the Academy's web site, will be used by the academy mostly for educational and public information purposes. One focus of the academy through this project is to provide role models to high school students to encourage them to pursue careers in science.

At the end of last year Alan spent 5 weeks in South Africa working on a range of collaborative projects involving ants. At the University of Potchefstroom Alan gave a series of five seminars and assisted with sampling design and data analysis and interpretation for a variety of projects using ants as bio-indicators, ranging from gas pipelines in Mozambique to feral horses in Namibia. Graduate student **Kirsten Botha** has taken on the ant work for the gas pipeline project, and recently visited CSIRO in Darwin for training in ant curation and identification. Alan then spent some time in Pilanesberg and Kruger Parks, giving presentation on monitoring systems for conservation management and is going back this year to assist with the establishment of a long-term ant-monitoring programme.

Department of Business, Industry, Resource and Development (formerly DPIF) Entomology Section

Out with the warm and wet and in with the warm and dry for the NT. With the onset of the dry season upon us, we are no longer saturated in sweat although our noses are running…too much pollen in the air! The drier weather has made travel a bit easier as **Megan Connolly** will agree. Megan has just finished monitoring the citrus properties in the Darwin area and is now concentrating on the Katherine region. The data collected will be used for IPM Workshops that will be conducted in Katherine and Darwin during two weekends in May. Megan has also been inspecting several mango properties with severe infestations of mango shoot caterpillar, *Penicillaria jocosatrix* in the Katherine region.

In the Darwin rural area and some parts of Katherine there has been an extensive outbreak of the day feeding armyworm, *Spodoptera exempta*, in pastures and lawns. **Deanna Chin** has been visiting blocks of pastures where hectares have been reduced from two feet high to bare runners in just a few days. Deanna has also been working on a joint project with **David Astridge** QDPI (South Johnstone) on IPM of rambutans and the production of an insect identification poster for growers.

Graham Brown, **Brian Thistleton** and **Michael Neal** joined Megan Connolly in Katherine for the Ag-

ricultural Field Day at Katherine Research Station that was held on the 12th of April. The crowds were treated to live displays of citrus pests and various species of termites. Brian and Michael visited a station 380 km NE of Alice Springs to collect and advise on control of *Mastotermes*. Graham and Brian have also recently visited Alice Springs to provide advice to the nursery industry on IPM and advise on termite control with table grape growers.

Back in Darwin, **Lanni Zhang** has been busy sorting through identifications on stored product pests and various other quarantine specimens including suspect fire ants (which were of course ginger ants). Lanni has also been compiling a list of mites collected from the NT with information on their appearance and damage to host plants. **Haidee Brown** and **Heather Wallace** have been venturing out to Howard Springs to try and collect more specimens of a fern thrips that **Laurence Mound** has identified as a new record for Australia. Fortunately this species is unlikely to be a pest. It is closely related to a new species described recently from S.E.Asia in connection with the studies by **Tony Wright** on the control of weedy *Lygodium* fern in Florida, but is probably native to the NT.

Tracy DAWES-GROMADZKI

QUEENSLAND – NORTH

AQIS/NAQS - Mareeba

Donna MacLeod has joined the group as an Entomological technician whilst **Kylie Anderson** takes 12 months maternity leave. Donna, a local from the Atherton Tablelands, is a graduate in Ag Science, Entomology from University of Queensland, completing her degree in 1998. She previously worked for Cropwatch Pty Ltd, monitoring for leaf spot and banana borer in Innisfail and for AQIS operations, on the vector monitoring program and live fly bioassay involving auditing of aircrafts for residual effect post spraying. **Judy Grimshaw** will introduce Donna to field survey work on a 2 day survey to the Daintree in June. **Kerrie Huxham** continues to guide the fruit fly monitoring and baitspray program in the Torres Strait and northern peninsula area. This has been a busy season with 89 *B. papayae* flies trapped so far from December 2002 to March 2003. Most of these were on Mabuiag Island. The other target species detected this season is *B. trivialis* on the islands close to Papua New Guinea. No melon fly have been trapped this season. Response activities include weekly baitspraying on seven of the Torres Strait islands, installation of male annihilation blocks on seven islands and installation of 30 response traps.

In March 2003 **Lastus Kuniata,** of Ramu Sugar in the Markham valley of PNG, visited the staff at NAQS Mareeba. In spite of many previous contacts by telephone and mail this was the first time that and he and **Judy Grimshaw** could meet in person. Lastus discussed various aspects of management of the NAQS Entomology program with **Kerrie Huxham** and Judy. **Barbara Waterhouse** also discussed various aspects of weed management and took him on a brief excursion to view Praxelis, a weed that is on the move north and may arrive in PNG soon. Barbara and Judy have completed the first Torres Strait survey for the season and report no new quarantine detections. During the survey they established 11 trial pheromone traps for assorted sugarcane stem borers on 4 islands. These will operate for around 4 weeks, then we will see how the traps weathered the storms.

BSES – Meringa & Mackay

Mohammed Sallam and **Keith Chandler** have been finding different grub species associated with cane and pasture on the Tablelands of late. They've received reports of severe white-grub damage to pastures recurring on the Atherton Tableland. Damage is most noticeable in *Setaria* pastures. This problem has recurred periodically from well before the 1930's. A few of the grubs are probably new species, and others are known species but not recorded to feed on cane elsewhere except on the Tablelands. Some larvae are outwardly identical to *Lepidiota frenchi and L. caudata*, however new DNA tests at the BSES laboratory at Indooroopilly have confirmed they are not either of those. **Stef de Faveri** of QDPI Mareeba collected similar larvae from potato fields that are in a rotation with sugarcane fields. The new DNA identification method may help clarify control recommendations, as past tests reveal similar larvae from nearby fields are vastly more tolerant than *L. frenchi* of insecticide commonly used in cane. The Tableland Cane Productivity Service Group (TCPSG) will be funding a BSES run pest management project for a period of three years, to identify these species, quantify their damage to cane, and investigate methods for their management. In addition, Christmas beetle larvae *Anoplognathus porosus* are common, often associated with greyback grubs, but causing damage in their own right.

Peter Samson of BSES Mackay, was last seen heading for Iron Range, on Cape York, for two weeks, to persecute local Lycaenidae. He was armed (with net and camera) and dangerous (mostly to self), and in company with **Peter Wilson** and **Kerrod Beattie**. **Catherine Kettle**, who for eight years has been a stalwart of the BSES research effort to overcome

greyback grub damage in the Burdekin region, has been in a role with an NHT-funded watercourse revegetation project and is now in a role with the BSES plant breeders due to a downturn in funding to fight the grub pest.

Keith Chandler whilst on an enforced stay at Cania Gorge National Park in February owing to extensive but welcome flooding following the prolonged dry conditions, noticed widespread, choking infestation by *Lantana montividensis.* This weed is a real cause for concern in the park; local graziers on surrounding holdings volunteered the same opinion. In many places more than 75% of the soil surface is covered and little native grass survives. Another candidate for a local biological control program?

As a part of a Sugar Research Development Corporation (SRDC) project on the preparedness for the incursion of exotic sugarcane borers into Australia, pest-specific incursion management plans have been developed by **Mohamed Sallam** and **Peter Allsopp**. These plans detail steps to be taken on detection of an exotic borer to minimize chances of establishment. Twenty one borer species have been recognised as having potential to invade Australia, with seven of them having a high incursion potential due to their geographical proximity. The incursion management plans include all available information on a certain pest based on overseas data, including pest taxonomy, morphology, life cycle, damage symptoms, economic impact, methods of control, and entry and spread potential. So far they have prepared incursion management plans for several species belonging to the genera: *Chilo, Sesamia, Eldana* and *Scirpophaga*. They're currently finalizing plans on the genus *Diatraea*. This information will be available on the BSES web site before the end of this year. A quarantine forum will take place during the ASSCT in May with representatives from BSES, Cane productivity boards, Plant Health Australia, AQIS and Canegrowers to discuss the management plans and plan for awareness campaign.

Agrisearch Services - Innisfail

Bill Farnsworth reports that the ongoing drought may be a factor in reducing certain insect pest populations in the far north. With three very low rainfall wet seasons in a row, conditions have not been seen like this for some time. In fact cassowaries have been observed coming out of the rainforest and drinking the water out of Bill's backyard fish pond! In the contract research field, greyback canegrub have been very quiet in coastal sugarcane and bananas. On the other hand, dry conditions have not slowed up big populations of rust thrips which are continuing to cause concern for banana growers. Other work of late for Bill includes insecticide trials on silver leaf whitefly control in cotton, mango tipborer control, termite barrier treatments and spiralling whitefly control in ornamentals.

QDPI – Emerald

It's been such a dry summer in Central Queensland, that even the dust now has dust on it! The end of the cotton season has seen silver leaf whitefly migrate en masse to basically anything that is green. Fortunately, exceptionally high levels of parasitism in the district this season have helped to suppress whitefly numbers. The Emerald entomology team (**Alison Shields, Richard Sequeira, Andrew Moore & Ali-Nur Duale**) recently took a break from it all and attended a 2-day extension meeting in Yeppoon where they delighted in seeing sand, surf and hills! Richard also attended a GRDC Advisor Update meeting in Goondiwindi, where he was invited to talk about the silver leaf whitefly threat and management options for broad-acre crops.

Recent visitors to the Emerald region include **Mark Coombs** and **Karen Waterworth** from CSIRO Brisbane who were collecting samples of sticky cotton, and **Bernie Frannzman** from DPI Toowoomba who was seeking aphid and aphid parasites.

QDPI – Bowen

Siva Subramaniam has been busy with research and project activities in recent months, including continued silverleaf whitefly (SLW) research work in North Qld, based in QDPI, Bowen. A collaborative SLW project has been approved for another 3 years, involving CSIRO and QDPI staff, with the project team to focus their research on IPM strategies for SLW in major vegetable crops. This includes IGR products, exotic parasitoid, spray threshold and best management practices. A series of meetings were conducted in Bundaberg and NQld recently to deliver management strategies for SLW.

Jane ROYER & Kerrie HUXHAM

QUEENSLAND – SOUTH

Queensland Department of Primary Industries

DPI staff who have gone "that extra mile" were awarded Australia Day Achievement Medallions at a special ceremony in Brisbane on 6 February. Minister for Primary Industries and Rural Communities, Henry Palaszczuk, and director-general, Warren Hoey, presented the Medallions to 10 DPI staff from around the State **Annice Lloyd** and **Marlene Elson Harris** received Australia Day Achievement Medallions. They were recognized for their significant contribution to

fruit-fly research and to the fire-ant program.
Chris Freebairn's work with mass rearing of the predatory mite *Euseius victoriensis* for augmentative release is proceeding well. In the first run, 150,000 mites produced on Typha pollen from 20 soybean trays were used in 2 field trials on mandarins. A good release response was obtained at all 3 rates in one trial, but only for the top rate in the other. Chris has also been busy in the 'project farming' area, and the DPI Image Management Systems project he was instrumental in developing is proceeding well under Kevin Adcock. Chris will soon branch out into an additional research area, working on the recently arrived exotic pest thrips, *Scirtothrips aurantii*, which is behaving very unusually in Brisbane, where it appears to be restricted to Crassulacean Acid Metabolism plants of the genus *Bryophyllum*.
Zamir Hossain (University of Western Sydney) visited **Moazzem Khan** at J. Bjelke Petersen Research Station, Kingaroy to get hands on experience on mirid oviposition in cotton. However, he did not miss the opportunity to see the magnificence of the Bunya Mountains. Recently Moazzem Khan visited **Martin Dillon** and **Sarah Mansfield** (CSIRO, ACRI, Narrabri) and in collaboration with them released some Trichopoda fly in the Pilliga area.
Frank Page has been investigating a minor outbreak of painted apple moth, *Teia anartoides*, in plums and apples grown on the Granite Belt. Severe defoliation of young, organically grown apple trees was occurring. Similarly, complete defoliation of some plum trees occurred at Applethorpe Research Station in an orchard where few pesticides were applied. It also defoliated large weeping willows The painted apple moth is threatening New Zealand pine forests since its accidental introduction there. The brown looper, *Photodes sinistrana* also infested the organic apple trees.
Also at Applethorpe RS, **Peter Nimmo**, Senior Experimentalist, is maintaining a laboratory colony of codling moth and has conducted some laboratory bioassays comparing new insecticides with the standard insecticide azinphos-methyl.
QDPI fruit fly researchers (**Annice Lloyd**, **Dan Smith, Ed Hamacek, Thelma Peek** and **Chris Neale**) are busy planning for their new area wide fruit fly management project to begin in the Central Burnett in July this year. This three year project, funded by citrus growers, Horticulture Australia and AusHort, will involve collaboration between Central Burnett grower associations, crop consultants, local shire councils, town communities and commercial horticultural producers (citrus and non-citrus) in the Central Burnett. The aim of the project is to improve fruit fly management across the entire district and it will be the first time that such a program has been attempted for Qfly in Queensland.

Army Malaria Institute (AMI)
In November 2002, **Bob Cooper** was appointed Deputy Director of AMI, and promoted to the military rank of Lieutenant Colonel. His PhD thesis on the distribution of mosquitoes of the *Anopheles punctulatus* group in Australia and PNG was approved. Congratulations to him for both of these achievements.
In March **Bob Cooper** and **Steve Frances** conducted field work at Mt Bundey Training Area, Northern Territory. They were joined at Mt Bundey by **Nigel Beebe**, University of Technology Sydney, **Darren Waterson**, Forestry NSW, **Andrew van den Hurk**, University of Queensland and **Darryl McGinn**, Mosquito Consulting Services, Brisbane. The main reason for the work was to evaluate repellent formulations and insecticides against mosquitoes. During visits to Darwin the team visited **Peter Whelan** and colleagues at the Medical Entomology Branch of Territory Health Services. We were also joined at Mt Bundey by **Tony Sweeney**, who visited for a few days before travelling to Canberra for the launch of his book entitled "Malaria Frontline- Australian Army Research during World War II", which has been published by Melbourne University Publishing.
Visitors to the institute included Dr **Scott Ritchie**, Tropical Health Program, Cairns, who visited last December. In December 2002, the 13th South-West Pacific Malaria Meeting-Roll Back Malaria in the Pacific was held at AMI and entomologists from several pacific nations visited the institute for the meeting.

Queensland University of Technology
QUT is not high on Australia's list of places for postgraduate entomological training, but we hope to see that change over the next few years. After a decade of post-docs, Tony Clarke finally landed a tenurable lectureship as an ecologist in the School of Natural Resource Sciences, QUT, early in 2002. The ecology group here is relatively small, but quite active with a number of new appointments and existing recognised expertise in vertebrate pest management and population genetics. The undergraduate programme teaches population ecology and population genetics, with a strong emphasis on experimental design.
The entomology group is developing fast, with the focus on insect/plant interactions. Tony is busily writing lectures (bringing entomology into second and third year classes), as well as managing an ACIAR project dealing with Oribius weevils in PNG and ongoing fruit fly research with **Jacinta Zalucki** at Griffith Uni. PhD students started so far are: **Alexsis Wil-**

son, studying tritrophic interactions between fruit, frugivorous vertebrates and frugivorous invertebrates; **Eve White**, studying tephretines and invasion biology of Senecio; and **Mark Schutze**, studying the population genetics and host use patterns of *Paropsis atomaria*. Alex has just passed the hurdle of the 12-month confirmation process. **Amy Lawson**, previously with the fruit fly group at Griffith Uni, has also just started at QUT, employed as a general research assistant. She will carry out illustration activities for the Oribius project and other entomological work.

Queensland Museum

In November **Geoff Monteith** led a party consisting of **Chris Burwell**, **Susan Wright** and **Jeff Wright** on another collecting trip to the southern Province of New Caledonia. Sorting of the multitudes of samples is now underway. We were also joined by **George Gibbs** from Victoria University New Zealand collecting Microterigidae and **Peter Mcquillan** also collecting Lepidoptera from the University of Tasmania.

Geoff Thompson will have a small display of his insect illustrations and a few etchings in the rare books display cabinet, level 3, State Library of Queensland, Queensland Cultural Centre, Southbank, Brisbane. The display runs from 29th January to 3rd March. At the Queensland Museum, also at the Queensland Cultural Centre, an exhibition celebrating the Museum's 140th Birthday continues until the 28th February. This exhibition includes three of Geoff's framed illustrations, Alan Dodd's well known case of Ulysses Butterflies, a display drawer of exotic beetles and a case of W. H. Miskin's butterflies.

Bureau of Sugar Experiment Stations

Peter Allsopp has made the move from the bush to the city, taking up his appointment as Manager - Special Projects with BSES in Indooroopilly. The new job will mean less direct input into entomology, and more into improving reporting and publication within BSES. He will still retain that interest in scarabs.

Bronwyn WALSH

SOUTH AUSTRALIA

South Australian Research and Development Institute (SARDI)

Gwen Mayo and **Nola Lucas** have joined the SARDI entomology unit to work on an ongoing project looking at new pesticides in fresh meat toxic baits as a management tool for control of the European wasp *Vespula germanica*. Toxic baiting works when foraging wasps take the bait back to the nest. Contact with the bait kills the workers and larvae, disrupting the function of the nest and causing it to collapse. Finding an effective pesticide that can be commercialised will help deal with nuisance wasp populations without the need to find the nest.

In March **Vanessa Bosco** from the Mediterranean Fruit Fly project visited **Bill Wood**'s Medfly team in WA assisting with experiments testing the mating competitiveness of sterile males exposed to ginger oil. The results were positive and further trials will be conducted in May 2003. **Cathy Smallridge**, who has been on maternity leave, has returned to part time work on the medfly project.

A representative from Rhizobacter, an Argentinian company, met with **Angela Lush**, **Ken Henry**, **Megan Leyson** and **Dennis Hopkins** on February 11th to further discuss snail and slug baits following an earlier visit in July 2002. The company has now decided to pursue registration for some of its bait products in Australia.

Megan Leyson presented a paper on snail control at the GRDC Update in Adelaide in the last week of February. **Nathan Luke** (1 day), **Kerrin Bell** (1 day) and **Dennis Hopkins** (2days) also attended the Update.

Angela Lush visited Canberra in late February for three days to meet with **Dr Geoff Baker**, CSIRO Entomology, one of her PhD supervisors. During February and March, Angela has also developed a staining technique for mucous trails in the field and this will enable her to get a better understanding of the movement of snails in citrus trees.

Recently (late March), **Greg Baker** and **Ken Henry** identified a quarantine interception as *Trogoderma granarium*, the kaphra beetle. This exotic species doesn't occur in Australia and is at the top of the list of the "not wanted" list for the Australian Grain's Industry. Credit to Greg and Ken for completing this very difficult identification.

Tony Burfield and **Nhieu Nguyen** (Vietnamese consultant) visited Perth in March to extend the results of the South Australian IPM project in vegetables to WA Vietnamese vegetable growers. They were well received and the WA growers have requested that some ongoing links be established with the local project.

Various members of the Entomology Unit had some interesting discussion with **John Sandow**, the new Program Manager for Crop Protection in GRDC, when he visited the Waite on March 20th.

Dennis Hopkins addressed a group of Wesfarmer Landmark Agronomists at the Waite in late March and **Greg Baker** gave a more detailed technical briefing on pulse pests to the same group in Adelaide and then travelled to Wagga Wagga to present a similar brief to NSW reps of Wesfarmer Landmark.

Megan Leyson, **Nathan Luke** and **Kerrin Bell** from the Broadacre Snail Project released the parasitic fly

Megan Leyson and **Nathan Luke** releasing *Sarcophaga* flies against snails

Sarcophaga penicillata (Sarcophagidae), which attacks the conical snail *Cochlicella acuta* (Mollusca) during the summer of 2002/2003 at three major nursery sites on Yorke Peninsula. The total number of flies released was 4000. At the first establishment check four weeks later, the next generation was recovered again at all sites. These flies moved an impressive distance and were unexpectedly persistent, being recovered up to a kilometer away from the release site with some flies originating from releases two years ago!

University of Adelaide

Andy Austin attended the ICE Executive and Scientific Program Meeting on 19-20 March, the main aim of which was to finalise the list of symposia to be presented at the international Congress in Brisbane next year.

Otherwise, work in the Austin group in early 2003 has largely been devoted to entomology teaching, and supervising a number of honours and post-graduate students who are approach thesis write-up time. The weekend of 29-30th March saw the inaugural 3rd year Entomology Camp which was run at Douglas Scrub south of Adelaide. In total 27 students and staff attended what was an insect-filled three days, that will serve as a major component of the practical program for the 'Biology & Diversity of Insects' course.

Dr Bob Zuparko, **Essig Museum of Entomology**, University of California, Berkeley, visited the Waite Campus during the first week of March to collect parasitoids of the spotted gum psyllid, *Eucalyptalyma maideni*, which is causing damage to ornamental eucalypts in the US. The collecting trip had limited success in terms of number of parasitoids collected due to extremely low host populations, probably as a result of the very dry summer. Bob's visit to Adelaide was consequently shortened as he headed eastward to try his luck in Sydney.

Glenys WOOD

TASMANIA

School of Ag Science/CRC Sustainable Production Forestry

Helen Nahrung submitted her PhD thesis in February and is currently writing up remaining papers and beginning work on a new grant to look at multiple mating and paternity in the leaf beetle *Chrysophtharta agricola* using molecular markers. A major 1 day national workshop on losses to eucalypt productivity was chaired by **Mamoru Matsuki** in February. **Luke Rapley** also presented his findings on *E. globulus* genetics in relation to autumn gum moth oviposition at a similar genetics workshop that same week. **Mamoru Matsuki** (CRC-SPF) will be relocating from

Hobart to Albany WA in July to continue work with forestry industry partners following **Andrew Loch's** departure late last year from that position. Visitors to the labs have included **John Hunt** and **Luc Bussière** (both post-docs at Uni NSW) who spent a successful time collecting field crickets for evolutionary research on calling behaviour. Progress towards the conference in Hobart in 2003, chaired by **Geoff Allen** is going well. Early bird registration closese on June 3rd. Details: <http://www.cdesign.com.au/entomology>.

Forestry Tasmania

We've completed the first stage of our reorganising and databasing the Tasmanian Forest Insect Collection (TFIC), thanks largely to the work of **Gabriel Warren** and **Marie Yee**. The first stage comprised priority taxa as defined by Plant Health Australia, who were providing the funding for adding TFIC records to the Australian Plant Pest Database. We hope to continue with the rest of the collection in the coming year.

Michael Wagner, from the University of Northern Arizona, spent a day with **Simon Grove** sharing ideas on insect biodiversity research and forest management issues at the Warra Long Term Ecological Research Site. **Fredrik Ostrand**, from the University of Lund (Sweden), also visited while taking a break from his work on autumn gum moth in Canberra, to talk with Simon and Marie about saproxylic hoverflies.

Simon Watson (honours student from the department of genetics, LaTrobe University) and his partner Susan spent much of February rummaging around logs all over Warra, collecting living invertebrates for a project using genetic techniques to assess dispersal ability in a range of saproxylic species. We hope this information will help us understand the scale at which we need to be considering managing coarse woody debris for dependent biodiversity in the wet eucalypt production forests.

Kate Harrison (University of Tasmania and CRC-SPF) has nearly finished a busy field season sampling invertebrates from living *Eucalyptus obliqua* trees of various ages at Warra, and now has a shade-house full of netting emergence bags each containing trunk sections or the contents of tree hollows. We're hoping for a big emergence of exciting creatures in the spring. It will be interesting to see how much overlap there is in the fauna between her living trees and the logs in Marie's doctoral study and in the long-term log decay study run by FT.

Michael MacDonald is conducting fieldwork in the upland wet eucalypt forests at Tarraleah aimed at evaluating the effectiveness of wildlife habitat strips in maintaining native forest biodiversity in logged forest. This is a revisit to study sites established by Rob Taylor before logging over a decade ago. The invertebrate component of this work comprises light trapping (for geometrid moths) and pitfall trapping (for a range of ground-dwelling invertebrate groups). Meanwhile, **Belinda Yaxley** is busy sorting pitfall trap samples following fieldwork for a related project looking at assessing the effectiveness of wildlife habitat strips in plantation nodes in damp sclerophyll forest in NE Tasmania.

Department of Primary Industries, Water and Environment

Owen Seeman and **Graeme Anderson**, with the able assistance of several staff, coaxed codling moth to lay over 40,000 eggs on cherries, then successfully killed them all with a deadly gas. We hope that this trial demonstrates quarantine security for cherries destined for Japanese markets, and we are planning to do it all again next year in a verification trial. In acarological pursuits, Owen is assisting Prof. **Gerd Alberti** (Ernst Moritz Arndy Universitat Greifswald) in his quest to understand the intricacies of mite sperm by collecting and preparing early-derivative mites (Allothyridae) for study. We hope to gain insights into the evolutionary relationships between these mites and other Parasitiformes. **David Cowie** has generously deposited a stunning collection of Tasmanian buprestid and lucanid beetles in the DPIWE Insect Collection. This fine collection contains specimens used in David's recent book, Jewel Beetles of Tasmania, and is a highly significant contribution to the state's natural history.

Owen SEEMAN

VICTORIA

Institute for Horticultural Development, Department of Primary Industries

Karen Robb, Commercial Floriculture and Nursery Crops Farm Advisor, San Diego County (University of California), has arrived at IHD Knoxfield to spend her sabbatical leave until the end of the year. Her major goals of work in Australia are to: 1, Increase knowledge of native Australian plants and their potential for use in the commercial ornamental production industry; 2, Increase knowledge of the pest complexes associated with native Australian plants; 3, Study Australian native predaceous mites reportedly effective at controlling western flower thrips to ascertain efficacy and practicality for importation into California.

While based at IHD, as part of her project Karen will be visiting various areas around Australia and New Zealand, including Perth, Sydney, Port Macquarie, Adelaide and Brisbane surveying and evaluating the

pest complexes associated with native Australian wildflowers, and talking to nursery and grower groups. At IHD she intends to work with several scientists including **Tony Slater**, **Peter Ridland**, **Mali Malipatil**, **David Beardsell**, **Daryl Joyce** and **Ian Pascoe**.

Institute of Sustainable Irrigated Agriculture, Department of Primary Industries

Larry Gut from Michigan State University visited Tatura last month and gave the Plant Protection team a fascinating presentation about his research on insect responses to synthesised pheromone. This seasons field work is nearly over for Alex, Mofakhar and Cathy, who will be confined to the office for awhile writing reports and analysing data.

Catherine MANSFIELD

Entomological Society of Victoria

The first meeting of the Society was held in April 1922 so 2002 marked its 75th anniversary, although there was a twenty year hiatus from 1941. Sadly the Council overlooked the event and had to be reminded by a member enquiring if there were to be a cake.

Since our last report excursions have been mounted to bushland surrounding the President's home in the Box-Ironbark forest of central Victoria and to the Museum to see, not only the pinned collection, but the husbandry rooms where investigations are being made into the rearing of terrestrial and aquatic insects for a forthcoming Museum exhibit incorporating live invertebrates.

Recent issues of the Journal have included articles on mating and feeding behaviour of butterflies, a search for extralimital butterfly populations; book reviews on Dragonflies of Victoria and Birdwing Butterfly conservation; and an overview of the recently published Butterfly Action Plan. Why not join the Society and get to read these gems in full?

The highly predictable Annual General Meetings of recent years produced some surprises for 2003. Our President **Allan Kellehear** has accepted the Visiting Professorship in Australian Studies at the University of Tokyo and our Editor, **Daniel Dobrosak**, has decided that ten years in the position is stifling the career aspirations of others. Long-standing council member **David Stewart** has taken the position of President though he may have misheard the nomination and **Ray McMahon** will commence as Editor under Daniel's tutelage for the rest of this year. **Ian Endersby**, less fleet of foot than the others, commences his lucky thirteenth year as Treasurer and Public Officer. **Peter Marriott** is welcomed as Vice-President, **Jan Tinetti** continues as Secretary and **Ken Walker** and **Peter Carwardine** as council members.

Ian ENDERSBY

WESTERN AUSTRALIA

Agriculture WA - Manjimup

Stewart Learmonth reports that longtailed mealybug has been a more serious pest than usual in winegrape vineyards and to a lesser extent in deciduous fruit tree orchards. Oil sprays gave inconsistent results. Vignerons have been advised to spray severely infested areas after vintage to reduce overwintering numbers to attempt to protect next season's crop. Garden weevil has been the subject of many enquiries from winegrape vineyards. Studies continue on food plants for orchard weevils and some field trials on cover crops are commencing this autumn. A video on insect transmitted viruses of potato crops has recently been completed.

Agriculture WA – Perth

David Cousins and **Sonya Broughton** have been very busy with WFT trials in strawberry, tomatoes, capsicum and lettuce this year. Before Easter, Sonya Broughton flew up to Carnarvon to visit citrus growers for 4 days with the aim of assisting growers to develop an IPM program for citrus.

WA Museum

Terry Houston writes that because of long-standing concerns about asbestos in the Museum's Francis Street building, in which the Entomology collection and many other collections are housed, the building has been closed to the public. This move is to allow staff to begin the removal and relocation of the displays. It has been proposed that the staff and collections will be moved to temporary accommodation while the Francis Street building is either freed of asbestos and refurbished or completely demolished. As yet, no announcement has been made as to where staff will be accommodated and deliberations as to the best course of action continue. A recent visitor to the Entomology Section was **Luca Toledano** from Italy with an interest in bembidiine carabid beetles.

Department of Conservation and Land Management

Tom Burbidge, **Allan Wills** and **Janet Farr** have just completed the Autumn FORESTCHECK invertebrate collection. FORESTCHECK is an integrated monitoring system that has been developed to provide information to forest managers in south-west Australia about any changes and trends in key ele-

ments of forest biodiversity associated with a variety of forest activities. Invertebrates have been collected in both spring and autumn over a 1-hectare plot in the Manjimup and Collie areas during the past two years using light traps, pitfall traps, sweep nets and beating trays. The microhabitats of litter and coarse woody debris have also been sampled. The pitfall traps were left open for 10-day periods. Over 800 morphospecies have been catalogued from all collections. Tom will probably add to this number when he finishes sorting the autumn pitfall catches.

John Matthiessen (CSIRO Entomology) and **Tara Simmul** (Serve-Ag WA) held a successful field day for the forestry industry in the Albany region. Despite bushfires keeping many of the forestry industry staff busy, approximately 30 people turned up to hear about *Heteronyx elongatus* biology and potential control methods. Discussions are continuing with the industry on how to turn this research into a practical reality.

Tara SIMMUL

THE AUSTRALIAN ENTOMOLOGICAL SOCIETY INC.
NOMINATION FOR MEMBERSHIP

Please return to: Ms Nancy Endersby, AES Secretary, c/o Institute for Horticultural Development, Private Bag 15, Ferntree Gully Delivery Centre VIC 3156 AUSTRALIA

We, the undersigned

Proposer .....
(print name) (signature)

Seconder .....
(print name) (signature)
being financial members of the Society, propose the following for membership of the Australian Entomological Society Inc.

Title.....Initials.....Given name.....Family name.....

of (Address) .....

.....Post Code.....

Tel. .....Fax .....

E-mail ..... Degrees, etc. .....

Interests, experience and publications in entomology for publication in the News Bulletin *Myrmecia* (please attach brief resumé) .....

I accept nomination and undertake, if elected, to abide by the rules of the Society and to pay annual subscriptions by the date prescribed.

Signature ..... **Date** .....

For **2003**: Annual subscription $110.00; full-time student or retired members $55.00 (incl. GST)

Students please attach proof of full-time student status
Payment in Australian dollars is required with nomination and may be made by MONEY ORDER, CHEQUE (made payable to Australian Entomological Society Inc.) or CREDIT CARD

Bankcard Visa Mastercard

Cardholder Name _____
Number _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ Expiry date _ _/_ _

Signature _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ I require a receipt YES/ NO

Australian Entomological Society National Conference
28 September – 3 October 2003
REGISTRATION FORM
ABN 77 542 131 588

Family Name: Dr Prof. Mr Mrs Ms Miss
Given Name:
Position:
University/Organisation:
Address:

Suburb/Town: State: Country: Postcode:
Telephone: Facsimile:

Email: (If possible, contact Conference Design this way)

Name Badges
Delegate:
Accompanying Person:

Special Requirements
Please advise if you have any special requirements, for example dietary or physical:

Registration Fees *Please indicate* ✓

Full Registration
Full Registration (before 3 June 2003) $430.00 [after 3 June $480.00]
Full Student Registration (before 3 June 2003) $240.00 [after 3 June $290.00]

Day Registration
Day Registration (before 3 June 2003) $160.00 [after 3 June $210.00]
Please indicate ✓ day of registration [Day fees do not include any social functions]
Monday ☐ Tuesday ☐ Thursday ☐ Friday ☐

Welcome Reception and Conference Dinner
Inclusive for "full" registrants, please indicate your attendance for catering purposes.
Sunday 28 September
Welcome Reception (Inclusive) Yes:____ No____
Welcome Reception (Additional) $25 per person No. of Tickets____
Tuesday 30 September
Conference Dinner (Inclusive) Yes:____ No____
Conference Dinner (Additional Person) $60.00 per person No. of Tickets____
Do you require a vegetarian meal Yes:____ No____

Field Trip
Wednesday 1 October
Do you wish to participate in a field trip Yes….No……
$50.00 per person $…….

Conference T-shirt
Cost: $20.00: Small Medium Large Extra Large Extra Extra Large

Partner's Activities
Port Arthur, Bush Mill and Settlement Adult: $90.00 x ___ Child: $45.00 x ___
Huon Valley and Tahune AirWalk Adult:$ 95.00 x ___ Child: $47.50 x ___
Cadbury Cruise, Bonorong Park Adult:$ 90.00 x ___ Child: $45.00 x ___
Bruny Island Wilderness Coast Adult: $130.00 x Child: $90.00 x ———-

Accommodation
Only complete this section if you require a booking made on your behalf. Indicate at least three choices (1,2,3). A valid credit card must be forwarded to guarantee your reservation, otherwise a deposit equal to one night's accommodation must be sent with your Conference Payment.

Corus Hotel	**Standard Single/Double/Twin**		**$110.00** ☐
	Superior Single/Double/Twin	$135.00	☐
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Oakford on the Pier	**One Bedroom Apartment**		**$205.00** ☐

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The credit card details supplied will be forwarded to the hotel to guarantee the accommodation booking. This card will not be used until checkout unless you do not arrive on the day
Indicated at which time the hotel will deduct equivalent to one night's accommodation cost.
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Registration	
Additional Social Functions/Field Trips	$
Partners' day tours	$
Accommodation*	$
Total Payment	**$**

**Only if you are unable to supply credit card details*
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